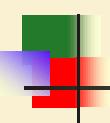
# Total Maximum Daily Load (TMDL) Development for Unnamed Tributary to Chickahominy River

Public Meeting November 24, 2003





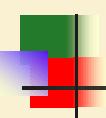


#### Introduction

- DEQ PRO Mark Alling (General discussion of TMDLs and UT to Chickahominy River impairments)
- Tetra Tech Inc. Clint Boschen (Technical approach for UT to Chickahominy River TMDL)



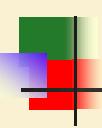




### What is a TMDL?

- TMDL = TOTAL MAXIMUM DAILY LOAD
- Amount of pollution a water body can receive without negatively affecting the stream uses
  - Statewide Beneficial uses are: aquatic life, fishing, shellfishing, swimming, drinking water
- TMDLs include all forms of pollution
  - point sources (from a discharge pipe)
  - non-point sources (from land surfaces or atmosphere)
  - natural background sources (swampwater)

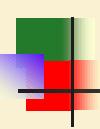




## Why are TMDLs needed?

"The primary mission of the TMDL program is to protect public health and the health of impaired aquatic ecosystems by ensuring attainment of water quality standards, including beneficial uses." (US EPA, 1998)





# Why - the legal basis for TMDLs

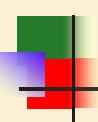
- 1972 Federal Clean Water Act (CWA) and 1997 State Water Quality Monitoring, Information and Restoration Act (WQMIRA)
  - Requires water sampling
  - Assessment of sample data every 2 years
  - Listing of impaired waters from the data
  - TMDL development for impaired waters
  - Implementation plans for the TMDLs





#### **How - the Elements of a TMDL**

- Be developed to meet water quality standards
- Be developed for critical (worst case) stream conditions
- Consider seasonal variations
- Include point sources and non-point sources
- Include a margin of safety for the stream
- Consider impacts of background conditions
- Have public participation
- Have reasonable assurance for implementation



# **How - The TMDL study process**

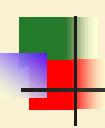
- Characterize the watershed
  - Gather and analyze data
  - Involve stakeholders and public in verifying existing data and collecting additional data
  - Use computer models to develop TMDL
- Conduct public meeting (with 30 day comment period)
- Develop and release draft TMDL report (with another 30 day comment period)
- TMDL Approval by EPA
- TMDL Implementation Plan





# **How - the Water Quality Standards**

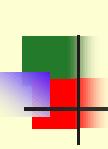
- Standards are regulations based on federal and state law that set limits on pollutants
- Dissolved Oxygen > 4 mg/l instantaneous, or > 5 mg/l daily mean
- pH between 6 and 9
- Water Temperature <32 C</p>
- the General Standard:
  - "All state waters shall be free from substances [...] which are harmful to human, animal, plant or aquatic life." (9 VAC 25-260-20)
- Listing of Impaired Waters and TMDL development are based on >10% violation rates of water quality standards, or impaired aquatic insect populations.



# How the TMDL helps the stream

- The TMDL determines the cause of the impairment, also called the stressor(s), and
  - determines the reductions in pollution necessary to restore the waterbody to above the water quality standards

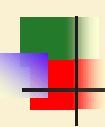




# **UT to Chickahominy River Impairments**

- 1.49 miles from the Tyson plant discharge downstream to the Chickahominy River confluence, for depleted aquatic insects, first identified in 1994, violated the general benthic standard.
- 0.40 miles from pond dam below Tysons plant to Chickahominy River confluence for high pH, first identified during 2003 benthic TMDL study.





#### **Please Send Public Comments**

#### **30 Day Public Comment Period:**

November 24 - December 23, 2003

#### Send written comments to:

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